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Exploring Antitrust Legislation for Data Rights Protection Under the Perspective of New-Quality Productivity

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ABSTRACT

New-quality productivity is a key driver of China's modernization and high-quality development, relying on both the activation of data as a new production factor and the support of technological innovation and fair market competition. However, legal shortcomings in data property rights protection and weak innovation incentives hinder the realization of data's full value. To address this, the paper proposes a twofold strategy: first, establish a comprehensive data property rights protection system by clarifying data ownership, usage, and management rights; second, use antitrust law to foster an innovation-friendly enforcement model, encouraging continuous high-quality achievements. Integrating data empowerment and innovation incentives ensures a healthy, sustainable development path for the data economy, laying a solid legal and economic foundation for Chinese-style modernization.

1. Introduction

In the grand strategic blueprint for accelerating high-quality development, the cultivation and advancement of new forms of productivity have not only emerged as a core issue but also represent the linchpin for enhancing national competitiveness. During the 11th collective study session of the Political Bureau of the CPC Central Committee, General Secretary Xi Jinping, with profound insight, unveiled the essence of new forms of productivity—a dazzling amalgamation of technological revolutionary leaps, innovative reorganization of production factors, and in-depth industrial transformation and upgrading. Its core hallmark is a qualitative leap in total factor productivity, manifesting a dual enhancement in production efficiency and benefits. Its quintessence lies not only in relentless innovation but also in an unwavering pursuit of excellence, significantly bolstering market competitiveness by elevating the added value of products and services. As a novel manifestation of advanced productivity under new historical conditions, new forms of productivity represent the cutting-edge trends in productivity development and steer the future trajectory of the national economy.

With the inclusion of data as an official category within the five major production factors in the "Opinions of the CPC Central Committee and the State Council on Establishing More Perfect Institutional Mechanisms for the Market-Oriented Allocation of Factors of Production," the value of data has garnered unprecedented attention. Data, through its

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deep integration with digital technology and the real economy, has not only infused new impetus into the transformation and upgrading of traditional industries but also opened up vast horizons for the thriving development of strategic emerging industries, becoming a core element in storing new momentum and leading the development of new forms of productivity. However, as a production factor, data's reproducibility and ease of dissemination have reshaped production patterns in multi-agent collaborative production, while also posing complexities and severe challenges for legal governance. [1]Currently, the confirmation and protection of data property rights are still in their preliminary exploratory stage. Although local pilot protection models have achieved certain results, they remain relatively superficial overall, struggling to comprehensively cover the complexity and diversity of data property rights. The academic community has yet to reach a consensus on the path for data property rights protection, and the lag in theoretical research has further exacerbated the difficulty of legal governance, leading to legal regulatory gaps in many areas explored by new forms of productivity. The safe utilization and legal circulation of data lack clear legal guidance and solid safeguards. Although existing laws such as the "Cybersecurity Law," "Data Security Law," and "Personal Information Protection Law" have laid an important foundation for regulating the safe utilization of data, they still need strengthening in terms of comprehensively covering the confirmation path and protection model for data property rights. Especially in areas such as the definition of data property rights, trading rules, and tort liability, the current legal framework contains numerous imperfections, severely constraining the in-depth development and innovative utilization of data factors and impeding the rapid development of new forms of productivity. Meanwhile, antitrust law, as an important legal weapon for maintaining market competition order, provides a solid legal guarantee in the market dimension for the development of new forms of productivity. [2] By regulating the behavior of market entities and breaking monopoly barriers, antitrust law fosters a market environment of fair competition, injecting strong impetus into the burst of innovative vitality. Effective competition, as the core engine of market dynamic development, continuously promotes optimal resource allocation through "breakthrough actions" and "tracking response" mechanisms, providing fertile soil and inexhaustible sources of motivation for enterprise innovation. Strengthening antitrust enforcement can not only further incentivize enterprises to introduce new products and explore new markets but also effectively curb unfair competition practices, maintain market order, and thereby drive economic efficiency improvements and innovation-driven development.

In summary, the legalized governance of data factors and the fair competition protection afforded by antitrust law jointly constitute the dual legal pillars for the development of new forms of productivity. On the one hand, it is necessary to accelerate the establishment of a legal framework for the confirmation and protection of data property rights, solving the problem of legal lag and providing comprehensive and in-depth legal safeguards for the standardized utilization of data factors. On the other hand, antitrust enforcement should be further strengthened to enhance market vitality and innovation drive, ensuring that business entities continue to innovate in an open and fair market environment. Through the coordinated advancement and continuous improvement of legal governance, a more superior institutional environment will be created for the development of new forms of productivity, providing solid and powerful support for economic high-quality development to reach a new level.

2. Justification of the Ternary Legal Structure of Data Rights

The development of new-quality productive forces undoubtedly hinges on the robust drive of technological innovation. Technological innovation serves as the core engine for the leap in new-quality productive forces and a crucial driving force for economic transformation and upgrading. Antitrust law, as an important legal tool to safeguard fair market competition, has one of its core value objectives in incentivizing innovation. By skillfully balancing the synergy between the market and the government, antitrust law strives to construct a competitive ecosystem conducive to innovation, thereby nurturing new-quality productive forces and leading the economy steadily towards a development path driven by innovation. [3]This innovation orientation can not only significantly enhance enterprises' core competitive advantages but also continuously inject vitality into the national economy.

2.1. Antitrust Enforcement Regulating Data Rights Pathways

In this process, antitrust law ensures that market entities compete fiercely in a fair, open, and transparent competitive environment by meticulously formulating and strictly enforcing fair competition rules. It provides a solid legal backbone for established enterprises while also opening up an equal competitive stage for new participants, fully stimulating market potential. With the vigorous rise of the digital economy, market competition patterns and technological innovation activities have become increasingly complex and volatile, posing stricter challenges to antitrust law. Antitrust law must not only agilely adapt to the rapid changes in the market but also provide a stable and predictable rule system while safeguarding fair competition to promote the continuous prosperity of innovation activities. Meanwhile, as a crucial regulatory subject, a proactive government plays a pivotal role in reconciling the delicate relationship between antitrust supervision and digital economic innovation. [4]The government can actively participate in the dynamic supervision of innovation activities through more flexible and efficient means, such as formulating technical standards and strengthening data usage and privacy protection regulations, to guide the direction of technological innovation and effectively avoid potential risks such as technological monopolies and information abuse. In addition, given the significant dynamism and uncertainty of innovation activities, the government must comprehensively consider their far-reaching impacts on social equity, employment security, national security, and other dimensions when regulating innovation, ensuring harmonious coexistence between innovative development and the overall interests of society. High-level antitrust enforcement can create a competitive environment conducive to the vigorous development of new-quality productive forces by establishing innovation incentive mechanisms and promoting dynamic compliance competition while ensuring fair competition, thereby driving the economy to accelerate towards a new stage of high-quality innovation-driven development.

In the context of new-quality productive forces, data, as an important carrier of such forces, necessitates comprehensive intellectual property protection directly related to the healthy development of the digital economy. Compared to the information definitions in the current intellectual property legal system and anti-unfair competition legal norms, most data can find corresponding protection pathways within the existing intellectual property system. Information presented in the form of works can obtain legal protection under the Copyright Law. Information that does not constitute a work but falls within the technical scope eligible for patent application can be safeguarded by the Patent Law. Technical information and business information that are unwilling to be disclosed, do not meet patent conditions, or cannot be patented due to their nature but have taken confidentiality measures can be regarded as trade secrets and protected under the Anti-Unfair Competition Law. Registered trademarks are strictly protected by the Trademark Law, while unregistered trademarks with a certain level of market recognition can also obtain legal protection through the Anti-Unfair Competition Law. [5]However, for information that cannot be classified as works and is considered data, there is a protection gap in the current legal system. Before the systematic regulation of data legislation is introduced, although the aforementioned legal norms constitute the legal foundation for data protection, none can provide comprehensive and effective proactive protection mechanisms for data. Technical and operational data can only be protected as trade secrets if they meet multiple conditions such as secrecy, value, and confidentiality, while a large amount of data that does not meet these conditions is difficult to include within the protection framework of the current laws. Furthermore, existing laws such as the Copyright Law primarily focus on protecting original intellectual creations, making it difficult to provide effective protection for a large volume of ordinary data that does not meet the criteria for originality. For some undisclosed data, even if attempts are made to protect them through the trade secret model, their registration process faces severe conflicts between publicity and confidentiality.

In recent years, China has actively explored new pathways for data intellectual property protection through a series of policies and pilot practices. The emergence of various data rights not only marks a significant increase in new-quality productive forces, injecting robust momentum into high-quality economic development, but also provides antitrust law with more advanced regulatory means, greatly enhancing the effectiveness of antitrust supervision. The "Outline for Building an Intellectual Property Powerhouse (2021-2035)" clearly proposes establishing rules for the protection of data intellectual property, and vari-

ous regions have actively responded by initiating pilot programs for data intellectual property registration. However, these practical explorations have also revealed issues that urgently need to be addressed. [6]For example, the rationality and feasibility of incorporating data intellectual property rights into a registration system similar to that for copyrights, patents, or trademarks still require further examination. At the same time, it is worth exploring whether the registration system can effectively address the dynamism and non-disclosure issues associated with data intellectual property rights. The separation of data rights provides a powerful tool for identifying monopolistic behaviors. In the wave of the digital economy, technology giants and innovative enterprises leverage advanced data analysis technologies and artificial intelligence technologies to rapidly expand their market share through the accumulation of big data and continuous algorithm optimization, forming monopolistic or oligopolistic situations. This new form of market monopoly no longer solely relies on traditional means of market share control but increasingly depends on technological innovation and data accumulation. Therefore, the antitrust law regulatory mechanism can leverage the technological advantages of high-quality innovations to more precisely and effectively identify and regulate the behaviors of these emerging market entities. As an emerging field, data intellectual property protection should explore more flexible and efficient confirmation and protection mechanisms based on the experience of trade secret protection to adapt to the characteristics of data and market demands.

From a broader perspective, the formation and development of new-quality productive forces cannot be separated from the powerful promotion of antitrust law with innovation as its core. At the same time, data intellectual property protection, as an important institutional support for new-quality productive forces, also requires profound innovations based on the existing property rights system. The intangible, non-rivalrous, and dynamically changing nature of data makes it difficult to fully fit into the traditional property rights system. [7]Therefore, proactive measures should be taken at the legislative level for data intellectual property protection. By clarifying the legal status of data property rights and establishing efficient and convenient mechanisms for data confirmation, protection, and circulation, we can not only provide a solid institutional support for digital economic innovation but also promote the efficient utilization and fair trading of data in the market, driving the sustained and healthy development of the digital economy.

2.2. Synergistic Approach for Digital Power Safeguards and Antitrust Law Regulation

From the theoretical perspective of new-quality productive forces, the safeguarding of digital power constitutes a core issue. It is not only a necessary condition for the optimal allocation of data as a key production factor but also the institutional foundation for a fair competitive order in the digital economy. The core of digital power lies in establishing ownership and usage norms for data resources, thereby facilitating the rational flow and efficient utilization of data elements. The "Three Rights Separation" framework advocated in the "Twenty Policies for Data Elements" and the "Three-Year Action Plan for 'Data Elements ×' (2024-2026)"—the division of data resource holding rights, data processing and usage rights, and data product operating rights—constructs a clear ownership system. This ownership framework not only provides solid institutional support for the circulation of data elements but also promotes the reuse and sharing of data resources through ingenious incentive mechanism designs, fully tapping into the economic value of data. However, in practical operations, excessive emphasis on the exclusivity effect of digital power may hinder the free circulation of data, thereby inhibiting innovation and efficiency improvements. Therefore, the core purpose of digital power safeguards lies in safeguarding the legitimate rights and interests of data holders through reasonable ownership division and rule design while ensuring value enhancement in data circulation and sharing, which aligns with the goal of fair competition pursued by antitrust law. By strengthening the synergistic effects between digital power safeguards and antitrust law regulations, robust momentum can be injected into the steady advancement of the data economy.[8]

The enforcement of antitrust laws has provided solid legal support for the safeguarding of digital power and effectively curbed the undue distortion of data resource allocation by monopolistic behaviors in the digital economy. The修订d Antitrust Law of 2022 explicitly incorporates "encouraging innovation" into its legislative purposes, further highlighting the significance of innovation in the digital economy. Within the scope of the digital economy, data serves as a core production factor, and its acquisition, circulation, and utilization all depend on a market environment of fair

competition. By suppressing conduct that abuses market dominance and eliminates or restricts competition, antitrust laws ensure equal opportunities for enterprises in accessing data resources and engaging in innovative activities, thereby preventing digital power from being monopolized by a few entities. Additionally, antitrust laws offer precise regulation addressing emerging issues such as algorithmic monopolies and mandatory data sharing by platforms, further safeguarding the equitable allocation of digital power and maintaining a dynamic balance in market competition.

In this process, digital power safeguarding and antitrust laws achieve deep synergy in terms of objectives and means: on the one hand, by clarifying the boundaries and sharing norms of digital power, they ensure the efficient utilization of data elements; on the other hand, by breaking down monopolistic barriers in data resources, they create an open and fair competitive atmosphere for innovation entities.[9] Overall, the core essence of digital power safeguarding lies in balancing the exclusivity and sharing of data resources, while antitrust laws provide the legal framework and implementation guarantees for achieving this goal. Together, they promote the high-quality development of new forms of productivity. By further optimizing the coordination mechanisms of legal rules, it is not only possible to effectively address power imbalances in the digital economy but also to provide inexhaustible impetus for innovation-driven economic growth.

3. Paradigm Reconstruction for Antitrust Regulation

3.1. Clarifying the Synergistic Path Between Innovation Harm Analysis and Data Rights Protection Mechanisms

In the context of new forms of productivity, the effective integration of innovation harm analysis and data rights protection is not only a critical path for antitrust laws to adapt to the development of the digital economy but also an important measure to promote the leapfrogging of new forms of productivity. Market competition in the digital economy has shifted from traditional static competition to dynamic competition, with an innovation-centric competitive mechanism gradually taking the lead. The protection of innovation by antitrust laws requires the incorporation of an innovation harm analysis paradigm in the legal application process. If a monopolistic behavior hinders the innovative activities of others or weakens the overall market's innovative driving force, it constitutes innovation harm. Such harm not only diminishes the market's dynamic competitiveness but may also impede the long-term development of the digital economy. Therefore, the identification of monopolistic behaviors should be expanded from traditional price and efficiency considerations to a comprehensive analysis of innovation-driven competition. Especially in the digital economy era, some monopolistic behaviors may not appear directly exclusive on the surface but may indirectly inhibit the vitality of market competition by weakening the innovative capabilities of business entities, leading to long-term losses in economic efficiency. Thus, innovation harm analysis should complement the theory of competition harm to accurately identify the deep impact of monopolistic behaviors on innovation competition.[10]

Meanwhile, digital power protection, as the foundation for the development of the digital economy, focuses on promoting the efficient circulation and sharing of data resources through reasonable ownership division and rule design. However, there are still several potential conflicts in the practice of the "three-right separation" model for data property rights. Although the separation of ownership, usage rights, and management rights provides theoretical support for the circulation and reuse of data resources, the ambiguity of right boundaries and the interest games among right holders can easily lead to data rights disputes, hindering the effective allocation of data resources and the continuous advancement of innovation. To address this issue, a comprehensive rights dispute resolution mechanism needs to be established. Firstly, judicial and arbitration procedures should be optimized to resolve rights conflicts, ensuring the fair protection of the legitimate rights and interests of all right holders. Secondly, the specific scope of each right under the three-right separation model must be clarified to prevent disputes arising from ambiguous rights. Additionally, digital tools such as blockchain technology can be leveraged to enhance the transparency and traceability of data rights protection, providing technical support for resolving rights disputes and thereby facilitating the efficient flow of data elements in the market.

Overall, the synergistic development of innovation harm analysis and data rights protection is crucial for antitrust laws to achieve the dual goals of fair competition and innovation incentives in the digital economy

era. Innovation competition is essentially a form of dynamic competition, with its core driving force stemming from the acquisition and utilization of data resources. By accurately identifying the potential harm to innovation caused by monopolistic behaviors and constructing a scientific and reasonable rights protection and dispute resolution mechanism, the effective allocation of data resources can be achieved, enhancing the market's overall innovation capacity. The innovation harm analysis of antitrust laws not only provides a new perspective for regulating monopolistic behaviors but also offers legal safeguards for digital power protection. The deep integration of the two will inject sustained momentum into the development of new forms of productivity.

3.2. Innovation Incentives and Data Rights Allocation: Dual Dimensions in Antitrust Law

Within the framework of new forms of productivity driven by the digital economy, the allocation and protection of data rights constitute key elements for promoting innovation and enhancing resource efficiency. As an important legal tool for promoting fair market competition and incentivizing technological innovation, antitrust law must comprehensively consider the dual dimensions of innovation factors and data rights allocation in a dynamic market environment. By incorporating innovation factors into antitrust exemption mechanisms and optimizing the allocation system for data rights, a balance can be struck between market efficiency and fairness, strengthening the institutional safeguard role of data rights in new forms of productivity.

Firstly, introducing innovation factors into antitrust exemptions or defenses is a core requirement for antitrust laws to adapt to the development of the digital economy. Market competition in the digital economy era is essentially based on innovation, which cannot be achieved without the support of data as a core production factor. Although some market behaviors may impose short-term restrictions on competition, if they can promote technological iteration and economic growth through innovative utilization of data resources, they should be considered legitimate behaviors under antitrust laws and exempted accordingly. For example, business models leveraging big data analytics for precise marketing or personalized services may lead to increased market concentration, but their positive impacts on consumer welfare and innovation drive cannot be ignored. Schumpeter's theory of disruptive innovation suggests that technological progress and market changes often come at the cost of disrupting traditional models. Therefore, antitrust enforcement should focus on the long-term role of innovation factors in competition. Business entities need to prove the substantial contribution of their behaviors in the innovative utilization of data, and the social benefits of this contribution should be significantly higher than the short-term competition harm. Through this balance mechanism, antitrust laws can not only incentivize market entities to invest in innovation but also provide greater scope for the reasonable allocation of data rights, thereby contributing to the leapfrogging of new forms of productivity.

Secondly, the allocation and protection of data rights are important foundations for ensuring the efficient utilization and fair allocation of data resources. Under the institutional framework of the three-right separation, ownership, usage rights, and management rights of data are allocated to different entities to balance data circulation and rights protection. However, in the current rights structure, individuals, as the primary producers of data, face inadequate rights protection and benefit distribution. Individuals have limited control over their own data and struggle to obtain rewards that match their contributions in data transactions and benefit distribution. Consequently, this not only leads to an imbalance in data rights but also diminishes individuals' enthusiasm for participating in data innovation activities. To effectively mitigate the uneven distribution of data rights, the government should optimize the data rights system through policy guidance and legislative intervention. For example, it can clearly stipulate the basic rights of individuals in the data property rights chain, ensuring they enjoy explicit rights protection in the process of data creation and circulation. Simultaneously, the government can establish a data revenue return mechanism to return part of the data economic benefits to individual data producers, thereby balancing the relationship between private and public interests in data. Leveraging blockchain and other technological means can enhance the transparency and traceability of data circulation, more precisely safeguarding the legitimate rights and interests of data rights holders. Additionally, the government can set up special funds dedicated to supporting the rights protection and innovation activities of individual data producers, further promoting the fair allocation and efficient utilization of data resources through this mechanism.

Taken together, innovation incentives and data rights allocation are core issues that antitrust laws need to address in the digital economy era. By incorporating innovation factors into antitrust exemption categories, the reasonable allocation of data rights can be promoted while safeguarding market competition. Meanwhile, optimizing the data rights allocation mechanism provides institutional support for the efficient utilization of data resources. The two complement each other, jointly contributing to the development of new forms of productivity and fully demonstrating the significant value of digital rights in economic transformation and technological progress.

In summary, fostering innovation incentives and allocating data rights constitute the core issues that antitrust law must address in the digital economy era. By incorporating innovative factors into the scope of antitrust exemptions, it is possible to facilitate the rational allocation of data rights while safeguarding market competition. Meanwhile, optimizing the mechanism for allocating data rights provides institutional support for the efficient utilization of data resources. These two aspects complement each other, jointly contributing to the development of new-form productivity and fully demonstrating the significant value of digital rights in economic transformation and technological advancement.

3.3. Establishing an Antitrust Enforcement Model That Embraces Innovation and Coordinates Data Rights

With the rapid development of the digital economy, data has emerged as a pivotal production factor driving economic growth and innovation. The allocation and protection of data rights not only directly impact the fairness and efficiency of market competition but also exert profound effects on technological progress and overall welfare at a broader societal level. Within the framework of antitrust law, balancing the rational allocation of data rights with the protection of market competition has become a crucial issue in legal theory and practice. The essence of new-form productivity lies in facilitating fundamental changes in production methods through technological innovation and optimal allocation of data resources. Although data, as a new means of production, can propel technological innovation, it may also, in certain contexts, lead to market control, thereby affecting competitive structures and market order. Especially in a competitive environment dominated by digital platforms and algorithms, the concentration and abuse of data rights can easily trigger anticompetitive behaviors, impeding the full unleashing of new-form productivity. Consequently, the protection of data rights is not only a necessary safeguard for market competition but also a critical task for promoting the healthy development of new-form productivity.

To address the anticompetitive risks posed by the concentration and abuse of data rights, antitrust law requires innovation, particularly in the context of data serving as a production factor. It is imperative to introduce dynamic supervision and flexible enforcement mechanisms. Traditional antitrust review methods, particularly static analyses based on market concentration and market share, struggle to effectively address the complex relationship between data rights and market competition. Therefore, antitrust law should adopt a dynamic perspective, conducting comprehensive assessments that incorporate the benefits of data usage and innovation potential, while avoiding excessive intervention and reliance solely on traditional static indicators. Simultaneously, flexible enforcement should become a core means of antitrust law, ensuring that data innovation continues to advance in a fair market competition environment through分级 assessments (tiered assessments), administrative guidance, and other approaches. Furthermore, the cross-border flow of data and data security issues in the globalization context have also become important considerations in antitrust legislation. Antitrust law should establish data security review mechanisms in conjunction with national security and data sovereignty requirements, ensuring that the allocation and use of data comply with national security regulatory needs and mitigating risks associated with data abuse and leakage. By constructing a flexible and dynamic antitrust legislative framework, the rational allocation and efficient distribution of data rights will be guaranteed, providing robust legal support for the high-quality development of the digital economy and driving continuous leaps in new-form productivity.

4. Legal Interest Allocation Paradigm in the Circulation of Data as a Factor of Production

4.1. Multi-Stakeholder Interests Protection in Data Resource Holding Rights Under Anti-Monopoly Regulation of Digital Powers

In the digital economy era, data has increasingly emerged as a core production factor, and its rational

allocation exerts a profound impact on market competition structures. Instead of explicitly adopting the traditional concept of "data resource ownership," the "Twenty Data Provisions" ensures reasonable rights and interests for various entities in data production, circulation, and utilization through the segmentation and deconstruction of data property rights. This approach stems from the multi-entity and multi-stage characteristics involved in the data generation process, including data storage, transmission, processing, analysis, and use, with each entity contributing differently to the data. Excessive concentration of data ownership in enterprises or governments may overlook individuals' contributions to data generation, leading to the concentration of data rights and fostering unfair market competition. Therefore, the "Twenty Data Provisions" adopts a "segmentation of ownership" mechanism, independently establishing rights such as data holding, use, and disposal, enabling a rational allocation of data rights among multiple entities, ensuring equal protection of all parties' interests in the market, preventing data monopolies or misuse, and facilitating the fair circulation of data resources.

From a legal perspective, the holding right of data resources is not absolutely exclusive but is subject to reasonable boundaries. Within the framework of anti-monopoly protection, the core purpose of data holding rights is to ensure that data holders can legally manage their data and prevent unauthorized access, tampering, or misuse. However, this management right is not an unconditional absolute right, particularly considering data's non-exclusivity and non-depletability. In this context, anti-monopoly law needs to protect data holding rights while reasonably restricting their exclusivity to safeguard data circulation and innovative vitality in the market. Furthermore, anti-monopoly law should introduce scrutiny of data right concentration levels to prevent a few entities from controlling the market through data monopolies, ensuring that the competitive positions of multiple entities are not infringed upon. By regulating data resource holding rights, anti-monopoly law can effectively curb data monopolistic behaviors and promote fair competition and market vitality.

4.2. Legitimacy and Market Fairness of Data Processing and Usage Rights Under Anti-Monopoly Regulation of Digital Powers

The raw, decentralized nature and "many-to-many" relationships of data render it difficult to trade without processing, making data processing and usage rights an important legal tool in the digital economy. Data processing and usage rights refer to the rights of data holders to process, use, and dispose of data legally obtained. This right not only safeguards the legitimate interests of data holders but also facilitates the marketization of data. According to the "Twenty Data Provisions," data processing and usage encompass data collection, processing, analysis, and the formation of data derivatives, including licensing others to use data or data derivatives. From a legal perspective, there is an inclusive relationship between data processing and usage rights and data resource holding rights, with holding rights serving as the premise for processing and usage rights, which in turn are a natural extension of holding rights.

However, the exercise of data processing and usage rights is not unconstrained. Within the framework of anti-monopoly law, the exercise of these rights should adhere to principles of legality, fairness, and transparency to avoid abuse and market monopolization. Especially in cases involving multiple entities, the exercise of data processing rights necessitates reasonable market collaboration and negotiation mechanisms to ensure that data owners can safeguard their own rights while promoting the free circulation of data. To reduce transaction costs and enhance negotiation efficiency, negotiations between data holders and enterprises should be conducted through third-party data trust institutions, which serve as agents to negotiate collectively on behalf of individual data holders and sign standardized data license contracts. This not only helps reduce transaction costs but also improves the efficiency of safeguarding data rights, preventing large enterprises from monopolizing the market through centralized data operations.

From an antitrust perspective, the standardized exercise of data processing and usage rights should preclude large enterprises from leveraging data resources to monopolize competition. Antitrust laws ought to scrutinize conduct related to data processing and usage to ensure that they do not suppress market competition or exclude potential competitors through improper means. Specifically, the free circulation and utilization of data should be subject to reasonable market regulations, thereby safeguarding innovation while preventing data from being utilized as a tool to eliminate competition. By regulating the exercise of data processing and usage rights, antitrust laws can effectively promote fair competition

among market entities and ensure the healthy development of the market environment.

4.3. Data Product Operating Rights and Market Order in Antitrust Protection of Digital Power

In the process of deep data processing, data products, as a new and independent data form, have become commodities with market transaction value through the concentration of human labor. As data owners, developers of data products possess four fundamental rights: possession, use, profit enjoyment, and disposal. The operating rights of data products not only facilitate the market-oriented circulation of data value but may also lead to unfair market competition, particularly when these rights are concentrated in a few large enterprises. Such concentration may hinder market innovation, exclude competition opportunities for small and medium-sized enterprises, and result in monopoly and unfair competition in digital markets. Therefore, the scrutiny of data product operating rights is particularly crucial in the antitrust protection of digital power.

Antitrust laws should strengthen the supervision of data product operating rights to prevent the formation of technical monopolies or market blockades through the possession and control of data products. Especially in markets with a high concentration of data products, enterprises may restrict the entry of competitors and exclude potential innovations by controlling the transfer and use of data products. In such cases, antitrust laws should examine whether transactions involving data products conform to the principles of fair market competition, avoid the abuse of market dominance, and ensure that innovation and technological progress can be realized in a fair market environment. Furthermore, antitrust laws should consider public interest issues in data product transactions, preventing illegal activities such as data abuse and privacy violations, and ensuring the sustainable development of the digital economy.

In summary, antitrust protection of digital power should promote fair competition in the market and prevent data monopolies and abuses by regulating the exercise of data resource holding rights, processing and usage rights, and operating rights. The application of antitrust laws in the digital economy era must not only safeguard the legitimate rights and interests of data subjects but also prevent the market from being manipulated by a few entities, ensuring the reasonable flow of data resources and the continuity of innovation.

5. Conclusion

The deep evolution of the digital economy and the paradigm reconstruction of new-quality productivity pose advanced legal demands for the coordination between the equitable legal interests of data rights and the antitrust regulatory system. In his report to the 20th National Congress of the Communist Party of China, General Secretary Xi Jinping proposed the strategic plan of "improving the data property rights system and cultivating a data factor market," outlining the fundamental principles for the modernization of China's data governance system. Based on the interpretive framework of new-quality productivity, this paper systematically deconstructs the normative dilemmas and institutional risks encountered in the process of defining ownership, governing circulation, and innovatively utilizing data resources, validating a composite governance approach combining "legalization of data rights and interests" with "synergistic allocation of innovation incentive mechanisms." Firstly, with the legal confirmation of the "separation of three rights" in data property rights as the core, the paper reconciles the inherent tension between the publicity and exclusivity of data sharing within the legal rights structure. By constructing a dynamically adaptable confirmation mechanism using smart contracts and distributed ledger technology, it showcases the governance essence of "resolving disputes by clarifying rights" in traditional Chinese legal systems (such as the land property rights system design in the Ming Dynasty's Criminal Law based on the ternary structure of possession, use, and income), aligning with the legal rationality of reconstructing production factors in the digital era. Secondly, with the reconstruction of the antitrust regulatory system as the pivot, the paper breaks through the traditional structuralist regulatory framework using a dual analysis paradigm of anti-competitive effects and innovation damage. By introducing the principle of proportionality to examine the legitimacy boundaries of market behavior, it achieves dynamic adjustments between competition policy and industrial policy through flexible enforcement means such as compliance commitments and behavioral remedies. Thirdly, the paper proposes constructing a value distribution mechanism for data factors based on contribution measurement, utilizing trust structures and algorithm audit technology to safeguard the three-dimensional legal interests balance among natural persons, corporate legal persons, and the public interest. This promotes the

transformation of the data capitalization paradigm from a possession logic to a circulation logic.

From a comparative legal perspective, the European Union's Digital Markets Act adopts a strict preemptive intervention paradigm for data monopolies based on the "gatekeeper system," whose legal paternalism tendency may inhibit the innovative vitality of the digital economy. In contrast, China's legislation urgently needs to explore regulatory wisdom that combines competition advocacy and risk prevention within the dialectical framework of "innovative development" and "security and controllability." In response to the deepening trend of global digital rule competition, it is advisable to focus on the construction of sovereign data legal domains, improve the compliance assessment system for cross-border data flows through the interactive application of "long-arm jurisdiction" clauses and the principle of judicial comity, and rely on the concept of penetrating supervision to address new anti-competitive behaviors such as algorithmic collusion and self-preferencing. Only by advancing institutional innovation in the dialogue between the heritage of historical jurisprudence and global governance experience can we build a legal foundation for new-quality productivity that combines normative rationality and practical efficacy, laying a concrete foundation of institutional justice for Chinese-style modernization.

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